

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of:

Art Unit 3621

Carr et al.

Confirmation No. 1154

Application No.: 09/689,289

Filed: October 11, 2000

For: PRINTING MEDIA AND METHODS  
EMPLOYING DIGITAL  
WATERMARKS

VIA ELECTRONIC FILING

Examiner: B. Bayat

Date: September 12, 2006

**REPLY BRIEF**

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Sir:

This brief is responsive to the Examiner's Answer mailed July 17, 2006.

REPLY BRIEF (OF SECOND APPEAL): 09/689,289

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**I.     § 101**

In the *Examiner's Answer*, the Office does not contest that the claimed methods "produce a useful, concrete, and tangible result."<sup>1</sup>

Instead, unpatentability under § 101 is urged for alleged failure of the claimed methods to be within the "technological arts."<sup>2</sup>

Additionally, for a claimed invention to be statutory, the claimed invention must produce a useful, concrete, and tangible result. Although the recited process may produce a useful, concrete, and tangible result, since the claimed invention, as a whole, is not within the technological arts as explained above, claims 1 and 14 are deemed to be directed to non-statutory subject matter and therefore claims 1-21 are rejected under 35 U.S.C. 101.

This Board recently made clear that there is no "technological arts" test to patentability. *Ex Parte Lundgren*, Appeal No. 2003-2088, October, 2005.

The Board stated:

Since the Federal Circuit has held that a process claim that applies a mathematical algorithm to "produce a useful, concrete, tangible result without pre-empting other uses of the mathematical principle, on its face comfortably falls within the scope of § 101," *AT&T Corp. v. Excel Communications, Inc.*, 172 F.3d 1352, 1358, 50 USPQ2d 1447, 1452 (Fed. Cir. 1999), one would think there would be no more issues to be resolved under 35 U.S.C. § 101. However, the examiner is of the opinion that there is a separate test for determining whether claims are directed to statutory subject matter, *i.e.*, a "technological arts" test.

...

Our determination is that there is currently no judicially recognized separate "technological arts" test to determine patent eligible subject matter under § 101. We decline to create one. Therefore, it is apparent that the examiner's rejection can not be sustained.<sup>3</sup>

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<sup>1</sup>     *Examiner's Answer*, page 4, lines 7-8.

<sup>2</sup>     *Examiner's Answer*, page 4, lines 8-10.

<sup>3</sup>     Slip opinion, pages 5, 9.

Applying the wrong test, the Examiner has reached the wrong result. The § 101 rejection should be reversed.

(In the wake of Lundgren, the PTO released a set of interim examination guidelines for determining subject matter eligibility of patent applications.<sup>4</sup> The guidelines provide that an invention falls within the scope of 35 U.S.C. 101 “if the claimed invention physically transforms an article or physical object to a different state or thing, or if the claimed invention otherwise produces a useful, concrete, and tangible result.” Since the present Examiner has conceded this last point, the claimed arrangements are concededly statutory.)

## II. § 103

The *Appeal Brief* demonstrated that the “watermark” mentioned in Leon is of the centuries-old, conventional paper variety. Evidence such as *Encyclopedia Britannica* entries for the term “watermark” were presented, and used to show that Leon’s watermark is not the “digital” variety with which Appellants’ invention is concerned.

Claim terms should be given the broadest reasonable meaning during prosecution. But reasonableness has bounds. Among these, the specification is primary. Here the Office need no more than glance at the top of the first page of the specification, to see in bolded, underlined, capital letters: **PRINTING MEDIA AND METHODS EMPLOYING DIGITAL WATERMARKS.**

Two sentences later, under the FIELD OF THE INVENTION heading, Appellants stated: *The present invention relates to use of digital watermark technology in conjunction with envelopes and other documents.*”

Likewise, throughout their specification Appellants repeatedly emphasized that their invention involves digital watermark technology.

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<sup>4</sup> [http://www.uspto.gov/web/offices/pac/dapp/opla/preognotice/guidelines101\\_20051026.pdf](http://www.uspto.gov/web/offices/pac/dapp/opla/preognotice/guidelines101_20051026.pdf)

The Examiner recognizes that the “watermark” required by the claims must be of the digital variety. Indeed, the Final Rejection states that Leon discloses “an original envelope having encoded thereon a digital watermark...”<sup>5</sup>

Factually, however, the Examiner is incorrect in his reading of Leon. Leon does not disclose any *digital* watermark. Instead, as earlier demonstrated and supported by the evidence of record, the watermark contemplated by Leon is of the traditional, paper, variety.

The *Examiner’s Answer* has not sought to redress this fundamental failure. As the rejection is founded on a factually erroneous reading of the principal reference, the Office’s *prima facie* burden under § 103 has not been met.

Additionally, the § 103 rejections are multiply-flawed for failure to identify compelling teachings, suggestions or motivations in support of the proposed modifications and combinations of references.

For example, the Final Rejection rationalized combining Bhaskaran with Leon, because incorporation of Bhaskaran’s fragile digital watermark would allow Leon to detect tampering and to deter fraudulent production of his label.<sup>6</sup>

But Leon already provides that functionality. His “identifier information” (such as his taggant beads, and his fluorescent strip, and his conventional paper watermark) are all provided for the purpose of preventing and detecting fraud.

Why would an artisan incorporate teachings from Bhaskaran to detect and deter fraud, when Leon already teaches multiple mechanisms that afford such functionality? The Final Rejection provides no reason. The evident reason is hindsight.

A few observations on other arguments newly made in the *Examiner’s Answer* follow:

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<sup>5</sup> February 9, 2005, Final Rejection, page 5, 7<sup>th</sup> and 8<sup>th</sup> lines from bottom; emphasis added.

<sup>6</sup> February 9, 2005, Final Rejection, sentence bridging pages 5 and 6.

## 1. Claim 2

Regarding the “watermark is formed with ink” claim limitation, the *Examiner’s Answer* cites Leon’s statement that “*various data fields be printed with different types of ink.*”<sup>7</sup>

This argument fails to note, however, that the “data fields” that are here referenced by Leon comprise “machine readable” elements of his arrangement (*i.e.*, barcode data).<sup>8</sup> “Machine readable” elements comprise one of *three* different classes of features employed on Leon’s label:

*The printed indicium label includes a human-readable portion, a machine-readable portion, and an identifier portion.*<sup>9</sup>

Leon describes his “watermark” as falling in the *third* class of features (the “identifier portion”).<sup>10</sup> He does not teach forming any type of watermark with ink.

Again, the rejection is premised on a factual mis-reading of the art. Again, obviousness has not been established.

## 2. Claim 3

Concerning the “watermark is formed by texturing” limitation of claim 3, the *Examiner’s Answer* cites the word “imprints” in Leon’s specification.<sup>11</sup>

Again, however, this argument suffers from an inattentive reading of Leon’s disclosure. The quoted term “imprints” is part of the description of one particular identifier – among a listing of several: “*The identifiers include, for example, fluorescent strips, marks such as watermarks, micro printing, imprints using special ink and/or taggants, and other features.*” Conspicuously, “imprints” forms no part of the description of Leon’s “watermark” identifier.

Again, the Office has stretched Leon too far.

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<sup>7</sup> *Examiner’s Answer*, bottom of page 10.

<sup>8</sup> Leon, col. 11, TABLE 1, and lines 22-28.

<sup>9</sup> Leon, col. 2, lines 51-53.

<sup>10</sup> Leon, col. 2, lines 42-43; col. 8, lines 18-19.

<sup>11</sup> *Examiner’s Answer*, page 12, line 8, quoting Leon at col. 2, lines 42-45.

**3. Claim 4**

Nothing in the *Examiner's Answer* refutes the failure of Yeung (and Leon, and Bhaskaran) to teach a watermark that withstands at least certain photocopying operations.

(As noted, photocopying may involve, *e.g.*, sampling of reflected light from a paper medium through a nominally transparent platen, using photosensors positioned in a slightly imperfect array – and with subtly varying individual photometric responses; subsequent interpolation and dithering of the resulting scan data to conform to requirements of a printing mechanism; followed by a chaotic process in which droplets of cyan, magenta, yellow and black ink – of just a few possible discrete sizes – are splashed from a distance onto a microscopically irregular receiving medium, etc. Watermarks that survive distortions commonly found in the digital realm (*e.g.*, JPEG compression, geometrical affine transformation) quickly become “fragile” and fail when subjected to the vagaries of photocopying.)

**4. Claim 5**

The *Examiner's Answer* quotes an excerpt from Yeung not mentioned during prosecution, and not noted by the undersigned in his review of the reference (*i.e.*, “...object descriptors with links to the creator's Web site”). Yeung thus teaches more than had been understood; the undersigned apologizes for not having noted this passage earlier.

Nonetheless, the rejection of claim 6 still suffers by lack of a teaching, suggestion, or motivation adequate to have led an artisan to modify and hybridize the three cited references in the manner asserted. Additionally, the claimed arrangement is non-obvious in view of its dependence from claim 4 (which is dependent from claim 1).

**5. Remaining Claims**

The *Examiner's Answer* did not raise any new point concerning any of the remaining claims. Accordingly, the remaining claims are not belabored here.

**III. CONCLUSION**

The claims are statutory under § 101. The Final Rejection improperly construed the “digital watermarking” limitations of the independent claims to read on Leon’s traditional *paper* watermark. Others of the claims’ limitations are not found in the art alleged, so the claimed arrangements could not result even if the art were combined as proposed. Moreover, the proposed combinations are impermissibly tainted by hindsight.

Accordingly, the Board is requested to reverse the Examiner’s rejections.

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